

=> fil reg

FILE 'REGISTRY' ENTERED AT 15:53:06 ON 04 OCT 2005

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STRUCTURE FILE UPDATES: 3 OCT 2005 HIGHEST RN 864406-23-5

DICTIONARY FILE UPDATES: 3 OCT 2005 HIGHEST RN 864406-23-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when conducting SmartSELECT searches.

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*****
*
* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
*
*****
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Structure search iteration limits have been increased. See HELP SLIMITS for details.

Experimental and calculated property data are now available. For more information enter HELP PROP at an arrow prompt in the file or refer to the file summary sheet on the web at:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

=> d l11 ide can tot

L11 ANSWER 1 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN

RN 544708-06-7 REGISTRY

ED Entered STN: 09 Jul 2003

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

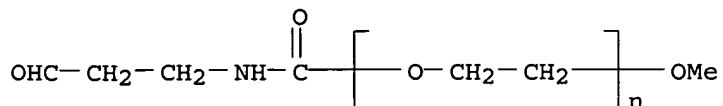
MF (C2 H4 O)<sub>n</sub> C5 H9 N O3

CI PMS

PCT Polyether

SR CA

LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

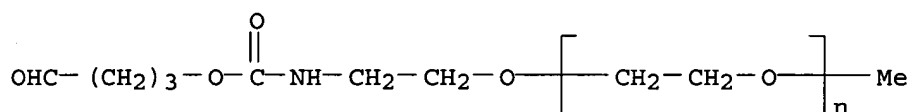
REFERENCE 1: 141:157893

REFERENCE 2: 141:72062

REFERENCE 3: 140:181998

REFERENCE 4: 139:53490

L11 ANSWER 2 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 544707-05-3 REGISTRY  
 ED Entered STN: 09 Jul 2003  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[4-oxobutoxy)carbonyl]amino]ethoxy] - (9CI) (CA INDEX NAME)  
 MF (C2 H4 O)<sub>n</sub> C8 H15 N O4  
 CI PMS  
 PCT Polyether  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

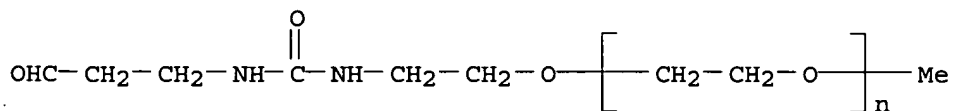
REFERENCE 1: 141:157893

REFERENCE 2: 141:72062

REFERENCE 3: 140:181998

REFERENCE 4: 139:53490

L11 ANSWER 3 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 544707-02-0 REGISTRY  
 ED Entered STN: 09 Jul 2003  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy] - (9CI) (CA INDEX NAME)  
 MF (C2 H4 O)<sub>n</sub> C7 H14 N2 O3  
 CI PMS  
 PCT Polyether  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

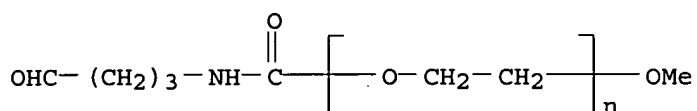
REFERENCE 1: 141:157893

REFERENCE 2: 141:72062

REFERENCE 3: 140:181998

REFERENCE 4: 139:53490

L11 ANSWER 4 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 544706-99-2 REGISTRY  
 ED Entered STN: 09 Jul 2003  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[ (4-oxobutyl) amino] carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)  
 MF (C2 H4 O)<sub>n</sub> C6 H11 N O3  
 CI PMS  
 PCT Polyether  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

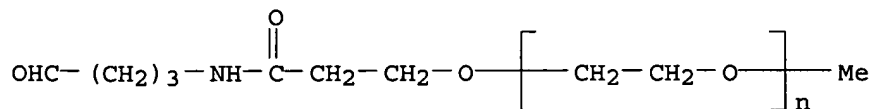
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REFERENCE 3: 140:181998

REFERENCE 4: 139:53490

L11 ANSWER 5 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 544706-97-0 REGISTRY  
 ED Entered STN: 09 Jul 2003  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl) amino]propoxy]- (9CI) (CA INDEX NAME)  
 MF (C2 H4 O)<sub>n</sub> C8 H15 N O3  
 CI PMS  
 PCT Polyether  
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4 REFERENCES IN FILE CA (1907 TO DATE)

4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

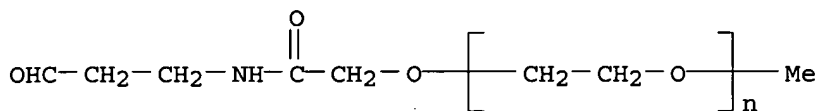
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REFERENCE 2: 141:72062

REFERENCE 3: 140:181998

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L11 ANSWER 6 OF 6 REGISTRY COPYRIGHT 2005 ACS on STN  
 RN 544706-95-8 REGISTRY  
 ED Entered STN: 09 Jul 2003  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy] - (9CI) (CA INDEX NAME)  
 MF (C2 H4 O)<sub>n</sub> C6 H11 N O3  
 CI PMS  
 PCT Polyether  
 SR CA  
 LC STN Files: CA, CAPLUS, USPAT2, USPATFULL



4 REFERENCES IN FILE CA (1907 TO DATE)  
 4 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 141:157893

REFERENCE 2: 141:72062

REFERENCE 3: 140:181998

REFERENCE 4: 139:53490

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 15:53:15 ON 04 OCT 2005  
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FILE COVERS 1907 - 4 Oct 2005 VOL 143 ISS 15  
 FILE LAST UPDATED: 3 Oct 2005 (20051003/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> => d l14 all hitstr tot

jan delaval - 5 october 2005

L14 ANSWER 1 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:609952 HCAPLUS  
 DN 141:157893  
 ED Entered STN: 30 Jul 2004  
 TI Novel monofunctional polyethylene glycol aldehydes useful for pegylation  
 IN Rosen, Perry; Nho, Kwang  
 PA USA  
 SO U.S. Pat. Appl. Publ., 21 pp., Cont.-in-part of U.S. Ser. No. 661,268.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C08G065-32  
 INCL 525389000; 525403000  
 CC 37-3 (Plastics Manufacture and Processing)  
 Section cross-reference(s): 63

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	US 2004147687	A1	20040729	US 2003-715607	20031118	<--
	KR 2003048293	A	20030619	KR 2001-78244	20011211	<--
	US 2003153694	A1	20030814	US 2002-303260	20021125	<--
	US 2004034188	A1	20040219	US 2003-431294	20030507	<--
	US 6916962	B2	20050712			
	US 2004122164	A1	20040624	US 2003-661268	20030912	<--
PRAI	KR 2001-78244	A	20011211			<--
	US 2002-348452P	P	20020116			<--
	US 2002-381503P	P	20020517			<--
	US 2002-407741P	P	20020903			<--
	US 2002-303260	A2	20021125			<--
	US 2003-431294	A2	20030507			<--
	US 2003-661268	A2	20030912			<--

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004147687	ICM	C08G065-32
	INCL	525389000; 525403000
US 2004147687	NCL	525/389.000
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
US 2003153694	NCL	525/523.000
	ECLA	C08G065/329; C08G065/331; C08G065/333U <--
US 2004034188	NCL	528/230.000
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
US 2004122164	NCL	525/054.100
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--

AB The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

ST polyethylene glycol aldehyde therapeutic active protein pegylation

IT Polyoxyalkylenes, preparation

RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

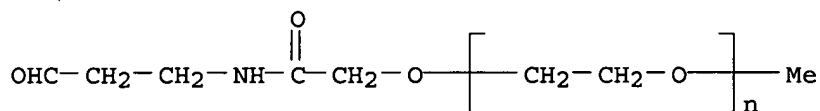
(aldehyde derivs.; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT Proteins

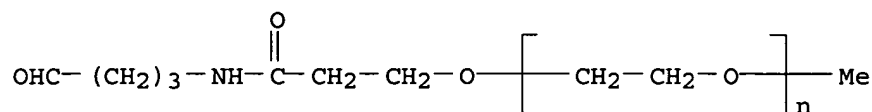
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(pegylation of; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

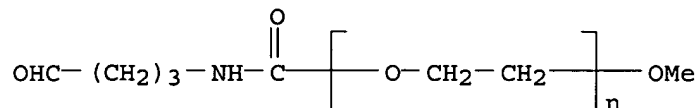
- IT 6318-30-5P 58320-73-3P 67665-18-3P, Methoxypolyethylene glycol acetic acid 67665-19-4P, Methoxypolyethylene glycol ethyl acetate 124661-64-9P 135649-01-3P 146167-55-7P 544706-94-7P 544706-96-9P 544707-00-8P 544707-01-9P 544707-03-1P 544707-04-2P 544707-06-4P 658083-74-0P 658083-75-1P 727741-77-7P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)
- IT 79-10-7DP, Acrylic acid, addition products with methoxypolyethylene glycol, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 6066-82-6DP, N-Hydroxysuccinimide, ester with methoxypolyethylene glycol acrylic acid addition product, amide derivative, urethane propionaldehyde 9004-74-4DP, Methoxypolyethylene glycol, addition products with acrylic acid, ester with hydroxysuccinimide, amide derivative, urethane propionaldehyde 41365-75-7DP, displacement reaction products with hydroxysuccinimide esterified methoxypolyethylene glycol acrylic acid addition product, deacetalized compound 533881-58-2P 544706-95-8P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P  
 RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)
- IT 67-64-1, Acetone, reactions 98-59-9, Tosyl chloride 105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl chloroformate 9004-74-4, Methoxypolyethylene glycol 14533-84-7, Pentafluorophenyl trifluoroacetate 14697-46-2, Pentane-1,2,5-triol 19060-15-2 32315-10-9, Triphosgene 41365-75-7 80506-64-5 125220-94-2, Methoxypolyethylene glycol propionic acid  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)
- IT 544706-95-8P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P  
 RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
 (novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)
- RN 544706-95-8 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



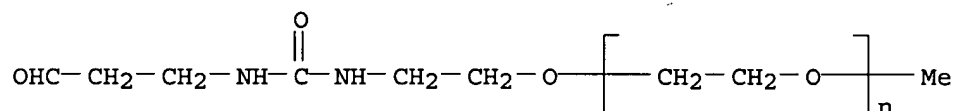
- RN 544706-97-0 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



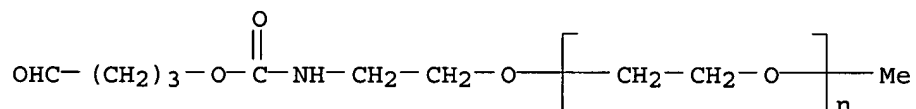
RN 544706-99-2 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[4-oxobutyl]amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

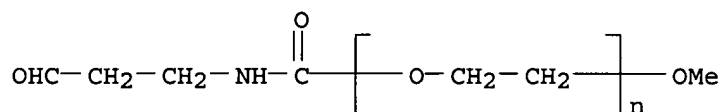
RN 544707-02-0 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544707-05-3 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[4-oxobutoxy]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544708-06-7 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

L14 ANSWER 2 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:513373 HCAPLUS

DN 141:72062

ED Entered STN: 25 Jun 2004

TI monofunctional polyethylene glycol aldehydes, preparation and protein conjugate

IN Rosen, Perry; Nho, Kwang H.

PA USA

SO U.S. Pat. Appl. Publ., 23 pp., Cont.-in-part of U.S. Pat. Appl. 2004  
34,188.  
CODEN: USXXCO  
DT Patent  
LA English  
IC ICM C08G065-00  
ICS C08G063-48; C08G063-91  
INCL 525054100; 528230000; 525526000  
CC 35-8 (Chemistry of Synthetic High Polymers)  
Section cross-reference(s): 63

FAN.CNT 4

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	US 2004122164	A1	20040624	US 2003-661268	20030912	<--
	KR 2003048293	A	20030619	KR 2001-78244	20011211	<--
	US 2003153694	A1	20030814	US 2002-303260	20021125	<--
	US 2004034188	A1	20040219	US 2003-431294	20030507	<--
	US 6916962	B2	20050712			
	US 2004147687	A1	20040729	US 2003-715607	20031118	<--
PRAI	KR 2001-78244	A	20011211	<--		
	US 2002-303260	A2	20021125	<--		
	US 2003-431294	A2	20030507	<--		
	US 2002-348452P	P	20020116	<--		
	US 2002-381503P	P	20020517	<--		
	US 2002-407741P	P	20020903	<--		
	US 2003-661268	A2	20030912	<--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
US 2004122164	ICM	C08G065-00
	ICS	C08G063-48; C08G063-91
	INCL	525054100; 528230000; 525526000
US 2004122164	NCL	525/054.100
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
US 2003153694	NCL	525/523.000
	ECLA	C08G065/329; C08G065/331; C08G065/333U <--
US 2004034188	NCL	528/230.000
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
US 2004147687	NCL	525/389.000
	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
AB	The monofunctional polyethylene glycol aldehydes are used for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived.	
ST	polyethylene glycol aldehyde pegylated protein conjugate	
IT	Proteins	
	RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)	
	(polyethylene glycol aldehydes for conjugates with proteins)	
IT	Polyoxyalkylenes, preparation	
	RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)	
	(polyethylene glycol aldehydes for conjugates with proteins)	
IT	14697-46-2, Pentane-1,2,5-triol	
	RL: RCT (Reactant); RACT (Reactant or reagent)	
	(cyclization; polyethylene glycol aldehydes for conjugates with proteins)	
IT	112344-11-3DP, Acrylic acid-ethylene oxide graft copolymer, reaction products with hydroxysuccinimide, aminodiethoxypropane, and aldehyde	



formation 533881-58-2P 544706-95-8P 544706-97-0P  
 544706-99-2P 544707-02-0P 544707-05-3P  
 544708-06-7P

RL: IMF (Industrial manufacture); PREP (Preparation)

(polyethylene glycol aldehydes for conjugates with proteins)

IT 67665-19-4P 92451-01-9P 544706-94-7P 544706-96-9P 544706-98-1P  
 544707-00-8P 544707-01-9P 544707-04-2P 544707-06-4P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(polyethylene glycol aldehydes for conjugates with proteins)

IT 1659-31-0, Di-2-pyridyl carbonate 9004-74-4, Methoxypolyethylene glycol  
 RL: RCT (Reactant); RACT (Reactant or reagent)

(polyethylene glycol aldehydes for conjugates with proteins)

IT 135649-01-3P 146167-55-7P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(reaction with aminodiethoxypropane; polyethylene glycol aldehydes for  
 conjugates with proteins)

IT 124661-64-9P 174569-25-6P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(reaction with aminodimethoxybutane; polyethylene glycol aldehydes for  
 conjugates with proteins)

IT 58320-73-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(reaction with dioxolanedimethylpropanol; polyethylene glycol aldehydes  
 for conjugates with proteins)

IT 80506-64-5

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with dipyridiyl carbonate; polyethylene glycol aldehydes for  
 conjugates with proteins)

IT 67665-18-3P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for  
 conjugates with proteins)

IT 125220-94-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with hydroxysuccinimide; polyethylene glycol aldehydes for  
 conjugates with proteins)

IT 6066-82-6, N-Hydroxysuccinimide

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol acetic acid; polyethylene  
 glycol aldehydes for conjugates with proteins)

IT 544707-03-1P

RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
 (Reactant or reagent)

(reaction with methoxypolyethylene glycol aminoethyl ether;  
 polyethylene glycol aldehydes for conjugates with proteins)

IT 19060-15-2

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetal;  
 polyethylene glycol aldehydes for conjugates with proteins)

IT 41365-75-7

RL: RCT (Reactant); RACT (Reactant or reagent)

(reaction with methoxypolyethylene glycol succinimidyl acetate;  
 polyethylene glycol aldehydes for conjugates with proteins)

IT 105-36-2, Ethyl bromoacetate 7693-46-1, 4-Nitrophenylchloroformate  
 32315-10-9, Triphosgene

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with methoxypolyethylene glycol; polyethylene glycol  
aldehydes for conjugates with proteins)

IT 6318-30-5

RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with nitrophenylchloroformate; polyethylene glycol aldehydes  
for conjugates with proteins)

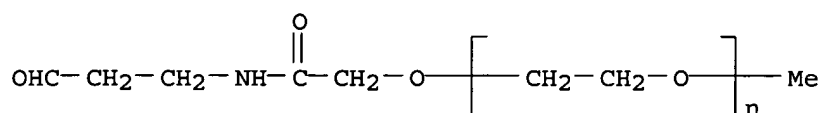
IT 544706-95-8P 544706-97-0P 544706-99-2P

544707-02-0P 544707-05-3P 544708-06-7P

RL: IMF (Industrial manufacture); PREP (Preparation)  
(polyethylene glycol aldehydes for conjugates with proteins)

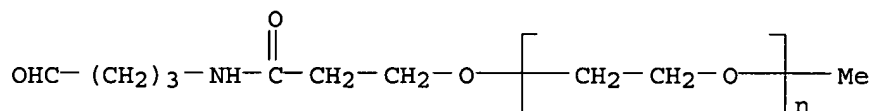
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CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



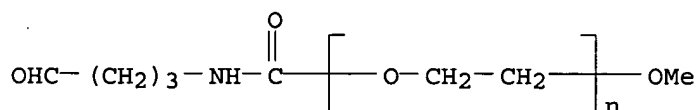
RN 544706-97-0 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



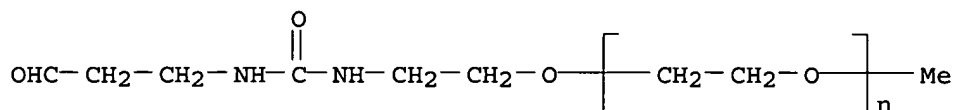
RN 544706-99-2 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(4-oxobutyl)amino]carbonyl]- $\omega$ -methoxy]- (9CI) (CA INDEX NAME)



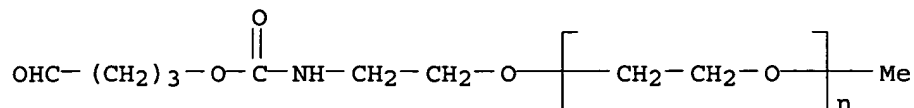
RN 544707-02-0 HCAPLUS

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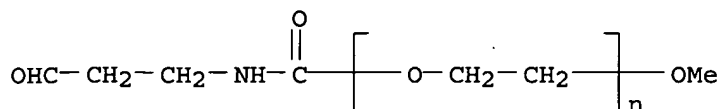


RN 544707-05-3 HCAPLUS

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RN 544708-06-7 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[ (3-oxopropyl) amino] carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

L14 ANSWER 3 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:142840 HCAPLUS  
 DN 140:181998  
 ED Entered STN: 22 Feb 2004  
 TI Novel monofunctional polyethylene glycol aldehydes  
 IN Rosen, Perry; Nho, Kwang  
 PA Sun Bio, Inc., USA  
 SO U.S. Pat. Appl. Publ., 16 pp., Cont.-in-part of U.S. Ser. No. 303,260.  
 CODEN: USXXCO  
 DT Patent  
 LA English  
 IC ICM C08G065-00  
 INCL 528230000; 528250000  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 63

FAN.CNT 4

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PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--

US 2004147687 NCL 525/389.000  
ECLA C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--

AB The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

ST polyethylene glycol aldehyde therapeutic active protein pegylation

IT Polyoxyalkylenes, preparation  
RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(aldehyde derivs.; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT Proteins  
RL: THU (Therapeutic use); BIOL (Biological study); USES (Uses)  
(pegylation of; novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT **544706-95-8P**  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT 6318-30-5P 58320-73-3P 67665-18-3P, Methoxypolyethylene glycol acetic acid 67665-19-4P, Methoxypolyethylene glycol ethyl acetate 124661-64-9P 135649-01-3P 146167-55-7P 544706-94-7P 544706-96-9P 544707-00-8P 544707-01-9P 544707-03-1P 544707-04-2P 544707-06-4P 658083-74-0P 658083-75-1P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

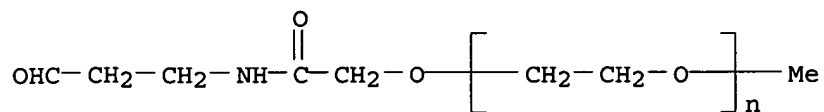
IT 314065-74-2DP, Acrylic acid-ethylene oxide graft copolymer methyl ether, ester with N-hydroxysuccinimide, displacement reaction products with 1-amino-4,4-dimethoxybutane, deacetalized compds. 533881-58-2P  
**544706-97-0P 544706-99-2P 544707-02-0P**  
**544707-05-3P 544708-06-7P**  
RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT 67-64-1, Acetone, reactions 98-59-9, Tosyl chloride 105-36-2, Ethyl bromoacetate 1659-31-0, Di-2-pyridyl carbonate 6066-82-6, N-Hydroxysuccinimide 7693-46-1, 4-Nitrophenyl chloroformate 9004-74-4, Methoxypolyethylene glycol 14697-46-2, Pentane-1,2,5-triol 19060-15-2 32315-10-9, Triphosgene 41365-75-7 80506-64-5 125220-94-2, Methoxypolyethylene glycol propionic acid 152552-24-4, Acrylic acid-methoxypolyethylene glycol graft copolymer 314065-74-2, Acrylic acid-ethylene oxide graft copolymer methyl ether 314065-74-2D, Acrylic acid-ethylene oxide graft copolymer methyl ether, ester with N-hydroxysuccinimide  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

IT **544706-95-8P**  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 544706-95-8 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



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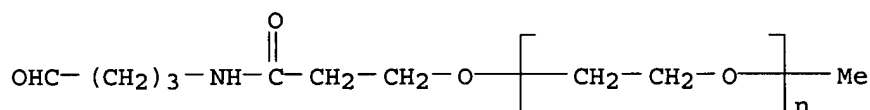
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RL: IMF (Industrial manufacture); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

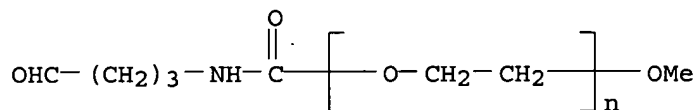
RN 544706-97-0 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



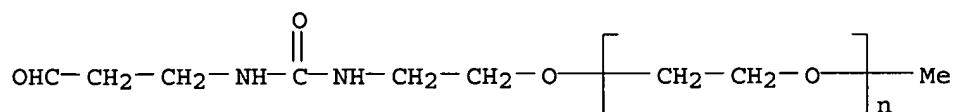
RN 544706-99-2 HCAPLUS

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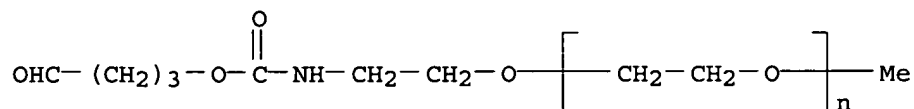
RN 544707-02-0 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544707-05-3 HCAPLUS

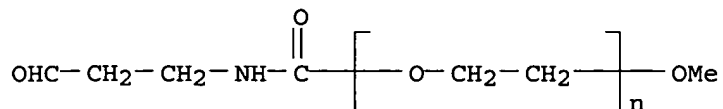
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544708-06-7 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -

methoxy- (9CI) (CA INDEX NAME)



L14 ANSWER 4 OF 4 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2003:472355 HCAPLUS  
 DN 139:53490  
 ED Entered STN: 20 Jun 2003  
 TI Monofunctional polyethylene glycol aldehydes with various spacers, their preparation and protein conjugates  
 IN Rosen, Perry; Nho, Kwang  
 PA Sun Bio, Inc., USA  
 SO PCT Int. Appl., 53 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM A61K  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 63

FAN.CNT 4

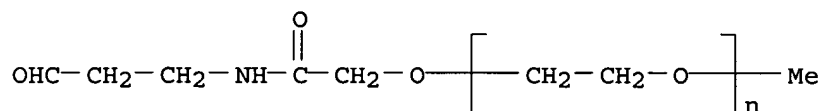
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CLASS

	PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
	WO 2003049699	ICM	A61K
	WO 2003049699	ECLA	C08G065/324; C08G065/329; C08G065/331; C08G065/333U <--
AB	Novel monofunctional polyethylene glycol aldehydes are for pegylating therapeutically active proteins to produce pegylated protein conjugates which retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived.		
ST	polyethylene glycol aldehyde pegylated protein conjugate		
IT	Proteins		

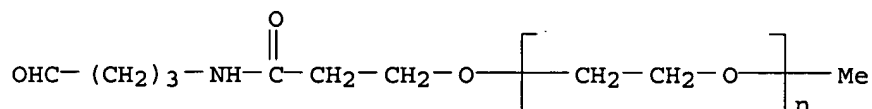
- RL: BUU (Biological use, unclassified); BIOL (Biological study); USES (Uses)  
(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active)
- IT Polyoxyalkylenes, preparation  
RL: BUU (Biological use, unclassified); IMF (Industrial manufacture); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 14697-46-2, Pentane-1,2,5-triol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(cyclization; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 112344-11-3DP, Acrylic acid-ethylene oxide graft copolymer, reaction products with hydroxysuccinimide, aminodiethoxypropane, and aldehyde formation 533881-58-2P 544706-95-8P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 67665-19-4P 92451-01-9P 544706-94-7P 544706-96-9P 544706-98-1P 544707-00-8P 544707-01-9P 544707-04-2P 544707-06-4P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 1659-31-0, Di-2-pyridyl carbonate 9004-74-4, Methoxypolyethylene glycol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 135649-01-3P 146167-55-7P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(reaction with aminodiethoxypropane; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 124661-64-9P 174569-25-6P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(reaction with aminodimethoxybutane; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 58320-73-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(reaction with dioxolanedimethylpropanol; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 80506-64-5  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with dipyridiyl carbonate; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 67665-18-3P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 125220-94-2  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(reaction with hydroxysuccinimide; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)

- IT 6066-82-6, N-Hydroxysuccinimide  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with methoxypolyethylene glycol acetic acid; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 544707-03-1P  
 RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT (Reactant or reagent)  
 (reaction with methoxypolyethylene glycol aminoethyl ether; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 19060-15-2  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with methoxypolyethylene glycol succinimidyl acetal; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 41365-75-7  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with methoxypolyethylene glycol succinimidyl acetate; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 105-36-2, Ethyl bromoacetate 7693-46-1, 4-Nitrophenylchloroformate 32315-10-9, Triphosgene  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with methoxypolyethylene glycol; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 6318-30-5  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction with nitrophenylchloroformate; polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- IT 544706-95-8P 544706-97-0P 544706-99-2P 544707-02-0P 544707-05-3P 544708-06-7P  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)
- RN 544706-95-8 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy] - (9CI) (CA INDEX NAME)



RN 544706-97-0 HCAPLUS

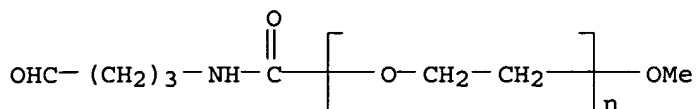
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy] - (9CI) (CA INDEX NAME)



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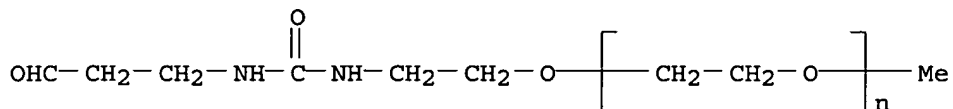


CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(4-oxobutyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)



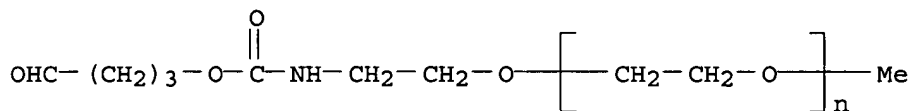
RN 544707-02-0 HCAPLUS

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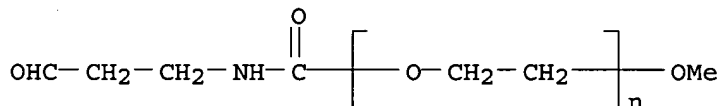
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CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544708-06-7 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)



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FILE 'USPATFULL' ENTERED AT 15:53:31 ON 04 OCT 2005

CA INDEXING COPYRIGHT (C) 2005 AMERICAN CHEMICAL SOCIETY (ACS)

FILE COVERS 1971 TO PATENT PUBLICATION DATE: 4 Oct 2005 (20051004/PD)

FILE LAST UPDATED: 4 Oct 2005 (20051004/ED)

HIGHEST GRANTED PATENT NUMBER: US6952836

HIGHEST APPLICATION PUBLICATION NUMBER: US2005217002

CA INDEXING IS CURRENT THROUGH 4 Oct 2005 (20051004/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 4 Oct 2005 (20051004/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

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>>> original, i.e., the earliest published granted patents or <<<

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>>> publications.  The publication number, patent kind code, and   <<<
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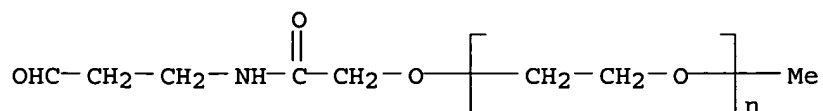
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      Nho, Kwang, Orinda, CA, UNITED STATES
PI    US 2004147687      A1    20040729
AI    US 2003-715607      A1    20031118 (10)
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      2003, PENDING Continuation-in-part of Ser. No. US 2002-303260, filed on
      25 Nov 2002, PENDING
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      NEWARK, NJ, 07102-5497
CLMN  Number of Claims: 74
ECL   Exemplary Claim: 1
DRWN  No Drawings
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AB    The present invention provides novel monofunctional polyethylene glycol
      aldehydes for the pegylation of therapeutically active proteins. The
      pegylated protein conjugates that are produced, retain a substantial
      portion of their therapeutic activity and are less immunogenic than the
      protein from which the conjugate is derived. New syntheses for preparing
      such aldehydes are described.

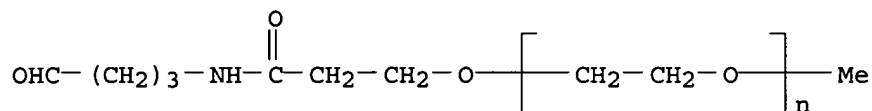
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IT    544706-95-8P 544706-97-0P 544706-99-2P
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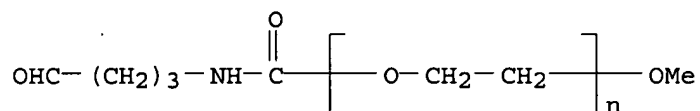
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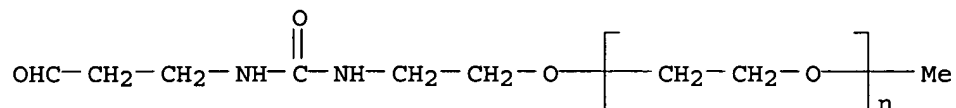
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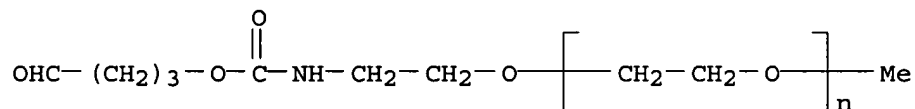
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CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy] - (9CI) (CA INDEX NAME)



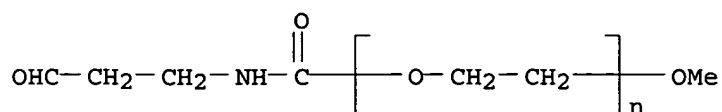
RN 544707-05-3 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy] - (9CI) (CA INDEX NAME)



RN 544708-06-7 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy] - (9CI) (CA INDEX NAME)



L15 ANSWER 2 OF 4 USPATFULL on STN

AN 2004:159360 USPATFULL

TI Novel monofunctional polyethylene glycol aldehydes

IN Rosen, Perry, Seattle, WA, UNITED STATES

Nho, Kwang H., Orinda, CA, UNITED STATES

PI US 2004122164 A1 20040624

AI US 2003-661268 A1 20030912 (10)

RLI Continuation-in-part of Ser. No. US 2003-431294, filed on 7 May 2003,  
PENDING Continuation-in-part of Ser. No. US 2002-303260, filed on 25 Nov  
2002, PENDING

PRAI KR 20011211

DT Utility

FS APPLICATION

LREP GIBBONS, DEL DEO, DOLAN, GRIFFINGER & VECCHIONE, 1 RIVERFRONT PLAZA,  
NEWARK, NJ, 07102-5497

CLMN Number of Claims: 72

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 1166

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

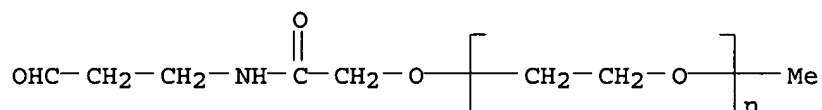
IT 544706-95-8P 544706-97-0P 544706-99-2P

544707-02-0P 544707-05-3P 544708-06-7P

(polyethylene glycol aldehydes for conjugates with proteins)

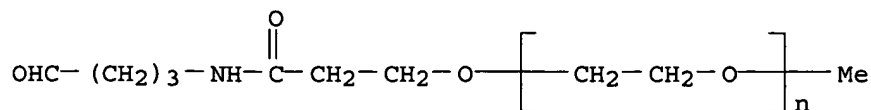
RN 544706-95-8 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)

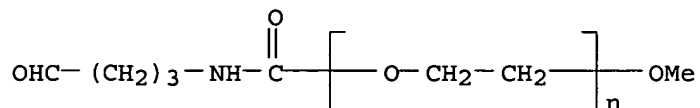


RN 544706-97-0 USPATFULL

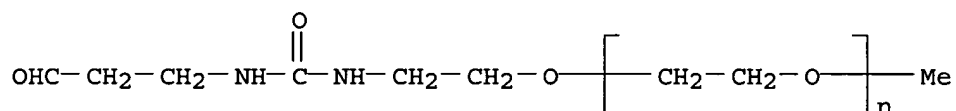
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



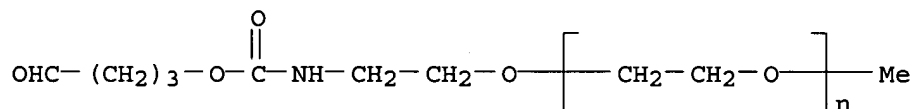
RN 544706-99-2 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(4-oxobutyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

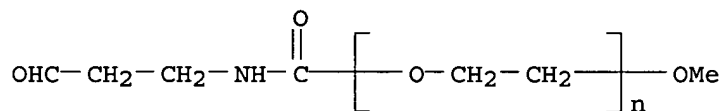
RN 544707-02-0 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544707-05-3 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)

RN 544708-06-7 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)

L15 ANSWER 3 OF 4 USPATFULL on STN

AN 2004:45194 USPATFULL

TI Novel monofunctional polyethylene glycol aldehydes

IN Rosen, Perry, North Caldwell, NJ, UNITED STATES

Nho, Kwang, Orinda, CA, UNITED STATES

PI US 2004034188 A1 20040219

US 6916962 B2 20050712

AI US 2003-431294 A1 20030507 (10)

RLI Continuation-in-part of Ser. No. US 2002-303260, filed on 25 Nov 2002, PENDING

PRAI KR 20011211

US 2002-348452P 20020116 (60)

US 2002-381503P 20020517 (60)

US 2002-407741P 20020903 (60)

DT Utility  
 FS APPLICATION  
 LREP GIBBONS, DEL DEO, DOLAN, GRIFFINGER & VECCHIONE, 1 RIVERFRONT PLAZA,  
 NEWARK, NJ, 07102-5497  
 CLMN Number of Claims: 4  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 853

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB The present invention provides novel monofunctional polyethylene glycol aldehydes for the pegylation of therapeutically active proteins. The pegylated protein conjugates that are produced, retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived. New syntheses for preparing such aldehydes are described.

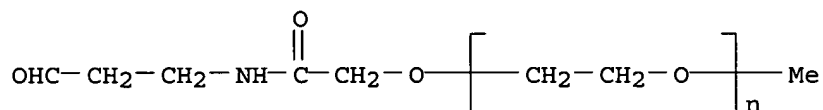
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 544706-95-8P

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

RN 544706-95-8 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



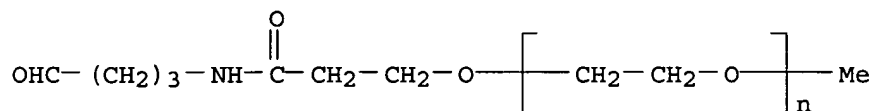
IT 544706-97-0P 544706-99-2P 544707-02-0P

544707-05-3P 544708-06-7P

(novel monofunctional polyethylene glycol aldehydes for pegylation of therapeutically active proteins)

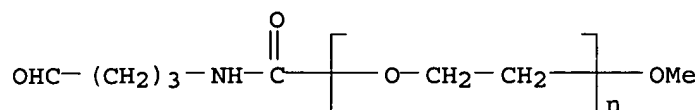
RN 544706-97-0 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



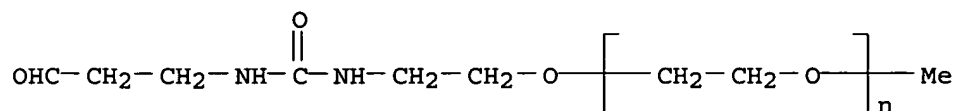
RN 544706-99-2 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(4-oxobutyl)amino]carbonyl]- $\omega$ -methoxy]- (9CI) (CA INDEX NAME)

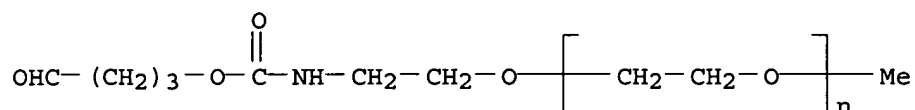


RN 544707-02-0 USPATFULL

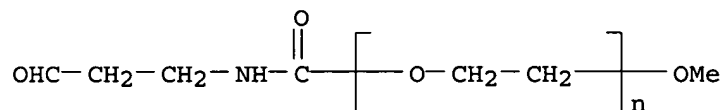
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544707-05-3 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[(4-oxobutoxy)carbonyl]amino]ethoxy] - (9CI) (CA INDEX NAME)

RN 544708-06-7 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy - (9CI) (CA INDEX NAME)

L15 ANSWER 4 OF 4 USPATFULL on STN

AN 2003:220403 USPATFULL

TI Novel monofunctional polyethylene glycol aldehydes

IN Rosen, Perry, North Caldwell, NJ, UNITED STATES

Nho, Kwang, Walnut Creek, CA, UNITED STATES

PI US 2003153694 A1 20030814

AI US 2002-303260 A1 20021125 (10)

PRAI KR 20011211

US 2002-348452P 20020116 (60)

US 2002-381503P 20020517 (60)

US 2002-407741P 20020903 (60)

DT Utility

FS APPLICATION

LREP GIBBONS, DEL DEO, DOLAN, GRIFFINGER &amp; VECCHIONE, 1 RIVERFRONT PLAZA, NEWARK, NJ, 07102-5497

CLMN Number of Claims: 58

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 1058

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Novel monofunctional polyethylene glycol aldehyde for pegylating therapeutically active proteins to produce pegylated protein conjugates which retain a substantial portion of their therapeutic activity and are less immunogenic than the protein from which the conjugate is derived and a new synthesis for preparing such aldehydes.

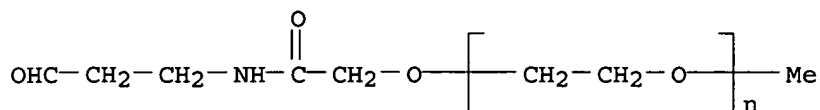
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 544706-95-8P 544706-97-0P 544706-99-2P  
544707-02-0P 544707-05-3P 544708-06-7P

(polyethylene glycol aldehydes with various spacers for conjugates with therapeutically active proteins)

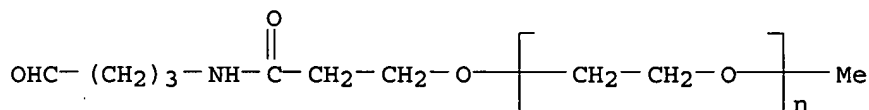
RN 544706-95-8 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(3-oxopropyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



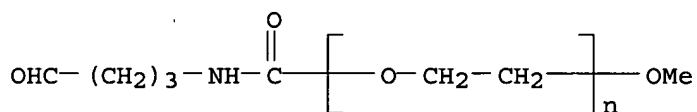
RN 544706-97-0 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[3-oxo-3-[(4-oxobutyl)amino]propoxy]- (9CI) (CA INDEX NAME)



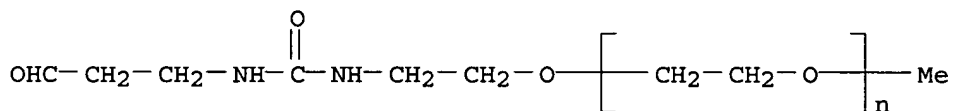
RN 544706-99-2 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(4-oxobutyl)amino]carbonyl]- $\omega$ -methoxy]- (9CI) (CA INDEX NAME)



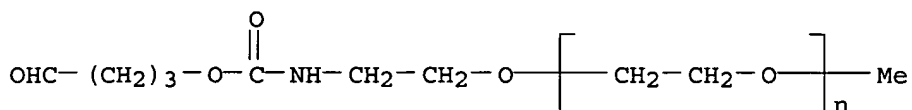
RN 544707-02-0 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(3-oxopropyl)amino]carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544707-05-3 USPATFULL

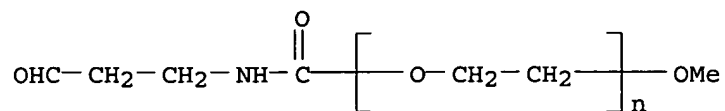
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-[[[(4-oxobutoxy)carbonyl]amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 544708-06-7 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(3-oxopropyl)amino]carbonyl]- $\omega$ -methoxy]- (9CI) (CA INDEX NAME)





=> d his

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SET COST OFF

FILE 'HCAPLUS' ENTERED AT 15:44:18 ON 04 OCT 2005

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L2 4 S (US2002-407741# OR US2002-381503# OR US2002-348452# OR KR2001  
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E ROSEN P/AU  
L4 128 S E3-E9,E20  
E NHO K/AU  
L5 48 S E3,E4,E9-E11  
E SUN/PA,CS  
E SUN B/PA,CS  
E SUN BIO/PA,CS  
L6 3 S E5-E12  
SEL RN L3

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L7 45 S E1-E45  
SAV L7 WITH715/A

FILE 'HCAPLUS' ENTERED AT 15:48:52 ON 04 OCT 2005

L8 4 S L3 AND L4-L6  
SAV L8 WITH715A/A  
L9 168 S L4-L6 NOT L8  
SAV L9 WITH715B/A

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L10 31 S L7 AND C2H4O  
L11 6 S L10 AND (" (C2H4O)NC8H15NO3" OR" (C2H4O)NC8H15NO4"OR" (C2H4O)NC5

FILE 'HCAOLD' ENTERED AT 15:52:37 ON 04 OCT 2005

L12 0 S L11

FILE 'HCAPLUS' ENTERED AT 15:52:41 ON 04 OCT 2005

L13 4 S L11  
L14 4 S L13 AND L1-L6,L8

FILE 'USPATFULL' ENTERED AT 15:52:55 ON 04 OCT 2005

L15 4 S L11

FILE 'REGISTRY' ENTERED AT 15:53:06 ON 04 OCT 2005

FILE 'HCAPLUS' ENTERED AT 15:53:15 ON 04 OCT 2005

FILE 'USPATFULL' ENTERED AT 15:53:31 ON 04 OCT 2005

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FILE 'REGISTRY' ENTERED AT 07:46:16 ON 05 OCT 2005  
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 PLEASE SEE "HELP USAGETERMS" FOR DETAILS.  
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 provided by InfoChem.

STRUCTURE FILE UPDATES: 3 OCT 2005 HIGHEST RN 864406-23-5  
 DICTIONARY FILE UPDATES: 3 OCT 2005 HIGHEST RN 864406-23-5

New CAS Information Use Policies, enter HELP USAGETERMS for details.

TSCA INFORMATION NOW CURRENT THROUGH JULY 14, 2005

Please note that search-term pricing does apply when  
 conducting SmartSELECT searches.

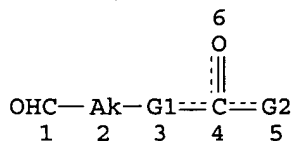
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* The CA roles and document type information have been removed from *
* the IDE default display format and the ED field has been added, *
* effective March 20, 2005. A new display format, IDERL, is now *
* available and contains the CA role and document type information. *
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Structure search iteration limits have been increased. See HELP SLIMITS  
 for details.

REGISTRY includes numerically searchable data for experimental and  
 predicted properties as well as tags indicating availability of  
 experimental property data in the original document. For information  
 on property searching in REGISTRY, refer to:

<http://www.cas.org/ONLINE/DBSS/registryss.html>

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L6      STR
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VAR G2=O/N/C
NODE ATTRIBUTES:
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DEFAULT ECLEVEL IS LIMITED
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GRAPH ATTRIBUTES:
RING(S) ARE ISOLATED OR EMBEDDED
NUMBER OF NODES IS 6
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STEREO ATTRIBUTES: NONE
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SEARCH TIME: 00.00.01

76 ANSWERS

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L5          3 S L1 SAM SUB=L2
L6          STR L1
L7          1 S L6 AND L3 SAM
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L13         9 S L12 NOT METHYLBUTYL
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L17 0 S L16

FILE 'HCAPLUS' ENTERED AT 07:45:06 ON 05 OCT 2005

L18 5 S L16

FILE 'USPATFULL' ENTERED AT 07:46:02 ON 05 OCT 2005

L19 3 S L16

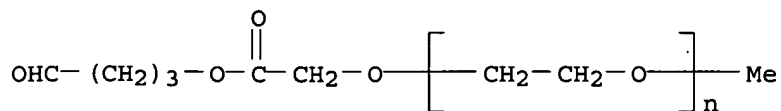
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L16 ANSWER 1 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN
RN 654655-87-5 REGISTRY
ED Entered STN: 26 Feb 2004
CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-[2-oxo-2-(4-
oxobutoxy)ethoxy]- (9CI) (CA INDEX NAME)
MF (C2 H4 O)n C7 H12 O4
CI PMS
PCT Polyether
SR CA
LC STN Files: CA, CAPLUS

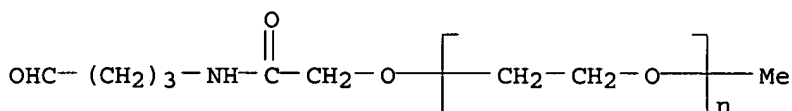
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1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:169365

L16 ANSWER 2 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 650634-82-5 REGISTRY  
ED Entered STN: 16 Feb 2004  
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)  
MF (C2 H4 O)<sub>n</sub> C7 H13 N O3  
CI PMS  
PCT Polyether  
SR CA  
LC STN Files: CA, CAPLUS, USPATFULL



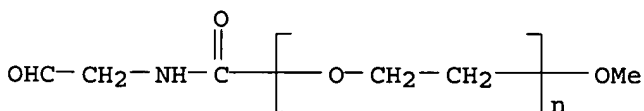
3 REFERENCES IN FILE CA (1907 TO DATE)  
2 REFERENCES TO NON-SPECIFIC DERIVATIVES IN FILE CA  
3 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 140:187355

REFERENCE 2: 140:187354

REFERENCE 3: 140:128840

L16 ANSWER 3 OF 3 REGISTRY COPYRIGHT 2005 ACS on STN  
RN 122235-25-0 REGISTRY  
ED Entered STN: 18 Aug 1989  
CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[2-oxoethyl]amino]carbonyl]- $\omega$ -methoxy- (9CI) (CA INDEX NAME)  
MF (C2 H4 O)<sub>n</sub> C4 H7 N O3  
CI PMS  
PCT Polyether  
SR CA  
LC STN Files: CA, CAPLUS



1 REFERENCES IN FILE CA (1907 TO DATE)  
1 REFERENCES IN FILE CAPLUS (1907 TO DATE)

REFERENCE 1: 111:97914

=> fil hcaplus

FILE 'HCAPLUS' ENTERED AT 07:46:45 ON 05 OCT 2005  
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jan delaval - 5 october 2005

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FILE COVERS 1907 - 5 Oct 2005 VOL 143 ISS 15  
 FILE LAST UPDATED: 4 Oct 2005 (20051004/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

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L18 ANSWER 1 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2004:120875 HCAPLUS  
 DN 140:187355  
 ED Entered STN: 13 Feb 2004  
 TI Preparation of PEGylated T1249 polypeptide conjugates as antiviral agents  
 IN Bailon, Pascal Sebastian; Won, Chee-Youb  
 PA F. Hoffmann-La Roche AG, Switz.  
 SO PCT Int. Appl., 61 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C07K014-16  
 ICS A61K038-16; A61P031-18  
 CC 63-5 (Pharmaceuticals)  
 Section cross-reference(s): 1  
 FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004013165	A1	20040212	WO 2003-EP7711	20030716
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW				
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
CA 2492954	AA	20040212	CA 2003-2492954	20030716
EP 1546193	A1	20050629	EP 2003-766191	20030716
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
US 2004171542	A1	20040902	US 2003-625103	20030722
PRAI US 2002-398190P	P	20020724		
US 2003-439213P	P	20030110		

WO 2003-EP7711	W	20030716
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CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004013165	ICM	C07K014-16
	ICS	A61K038-16; A61P031-18
WO 2004013165	ECLA	A61K047/48H4P; C07K014/16D
EP 1546193	ECLA	A61K047/48H4P; C07K014/16D
US 2004171542	NCL	514/012.000
	ECLA	A61K047/48H4P; C07K014/155

AB Pegylated T1249 polypeptide compds. are provided. Also provided are pharmaceutical compns. containing pegylated T1249 polypeptide compds., and processes of making. Further provided is the use of pharmaceutical composition comprising, in admixt. with a pharmaceutically acceptable excipient, a PEGylated T1249 polypeptide conjugate, for the preparation of a medicament for the inhibition of HIV infection. Propionaldehyde-PEG was reacted with T1249 to obtain propionaldehyde-PEG-T1249 conjugate. Antiviral efficacy of the conjugate was shown in rats.

ST PEGylated T1249 polypeptide conjugates antiviral

IT Drug delivery systems  
(freeze-dried; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(infusions; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(injections, i.m.; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(injections, i.p.; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(injections, i.v.; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(injections, s.c.; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Drug delivery systems  
(injections; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT Bioavailability  
Human immunodeficiency virus  
(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT 125061-88-3DP, reaction with T1249 251562-00-2DP, T1249, conjugates with polyethylene glycol derivs. 650634-82-5DP, reaction with T1249 650634-82-5P  
RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT 5292-43-3, tert-Butyl bromoacetate 6346-09-4, 4-Aminobutyraldehyde diethylacetal 9004-74-4, Methoxypolyethylene glycol 125061-88-3 251562-00-2, T1249  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT 67665-18-3P 650634-81-4P 656807-59-9P  
RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent)  
(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT 658963-49-6

RL: PRP (Properties)

(unclaimed protein sequence; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

IT 251651-38-4 658681-54-0 658681-55-1 658681-56-2

RL: PRP (Properties)

(unclaimed sequence; preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

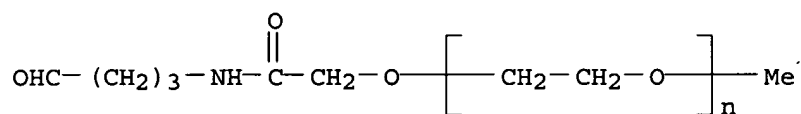
IT 650634-82-5DP, reaction with T1249 650634-82-5P

RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)

(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

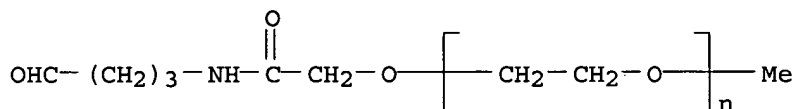
RN 650634-82-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 650634-82-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



L18 ANSWER 2 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:120874 HCAPLUS

DN 140:187354

ED Entered STN: 13 Feb 2004

TI Preparation of PEGylated T20 polypeptide conjugates as antiviral agents

IN Bailon, Pascal Sebastian; Won, Chee-Youb

PA F. Hoffmann-La Roche AG, Switz.

SO PCT Int. Appl., 38 pp.

CODEN: PIXXD2

DT Patent

LA English

IC ICM C07K014-16

ICS A61K038-16; A61P031-18

CC 63-5 (Pharmaceuticals)

Section cross-reference(s): 1

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
WO 2004013164	A1	20040212	WO 2003-EP7710	20030716
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW				

RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

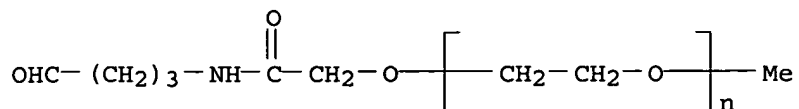
CA 2493534	AA	20040212	CA 2003-2493534	20030716
EP 1527088	A1	20050504	EP 2003-766190	20030716
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
BR 2003012889	A	20050614	BR 2003-12889	20030716
US 2004049018	A1	20040311	US 2003-623873	20030721
PRAI US 2002-398195P	P	20020724		
WO 2003-EP7710	W	20030716		

## CLASS

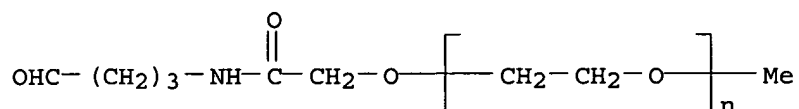
PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2004013164	ICM	C07K014-16
	ICS	A61K038-16; A61P031-18
WO 2004013164	ECLA	C07K014/16D
BR 2003012889	ECLA	C07K014/16D
US 2004049018	NCL	530/402.000
	ECLA	C07K014/16D
AB	Pegylated T20 polypeptide compds. are provided. Also provided are pharmaceutical compns. containing pegylated T20 polypeptide compds., and processes of making and using such compds. and compns. Propionaldehyde-PEG was reacted with T20 to obtain propionaldehyde-PEG-T20 conjugate (I). The IC50 of I was 0.261 µg/mL.	
ST	polyethylene glycol T20 polypeptide conjugate antiviral	
IT	Drug delivery systems (freeze-dried; preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	Drug delivery systems (injections; preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	125061-88-3DP, reaction with T20 peptide 159519-65-0DP, T20, conjugates with polyethylene glycol derivs. 650634-82-5DP, reaction with T20 peptide 650634-82-5P RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	5292-43-3, tert-Butyl bromoacetate 6346-09-4, 4-Aminobutyraldehyde diethylacetal 9004-74-4, Methoxypolyethylene glycol 125061-88-3 159519-65-0, T20 RL: RCT (Reactant); RACT (Reactant or reagent) (preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	67665-18-3P 650634-81-4P 656807-59-9P RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT (Reactant or reagent) (preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	658963-50-9 RL: PRP (Properties) (unclaimed protein sequence; preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
IT	650634-82-5DP, reaction with T20 peptide 650634-82-5P RL: PAC (Pharmacological activity); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (preparation of PEGylated T20 polypeptide conjugates as antiviral agents)	
RN	650634-82-5 HCAPLUS	
CN	Poly(oxy-1,2-ethanediyl), α-methyl-ω-[2-oxo-2-[(4-	



oxobutyl)amino]ethoxy] - (9CI) (CA INDEX NAME)



RN 650634-82-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy] - (9CI) (CA INDEX NAME)

L18 ANSWER 3 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2004:80370 HCAPLUS

DN 140:128840

ED Entered STN: 01 Feb 2004

TI Aldehyde derivatives of polyethylene glycol

IN Won, Chee-youb

PA USA

SO U.S. Pat. Appl. Publ., 18 pp.

CODEN: USXXCO

DT Patent

LA English

IC ICM C08G065-00

INCL 525403000; 528405000

CC 35-8 (Chemistry of Synthetic High Polymers)

Section cross-reference(s): 34

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 2004019157	A1	20040129	US 2003-623978	20030721
	CA 2493221	AA	20040212	CA 2003-2493221	20030716
	WO 2004013205	A1	20040212	WO 2003-EP7734	20030716
	W:				
	AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,				
	CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,				
	GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,				
	LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH,				
	PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA,				
	UG, UZ, VN, YU, ZA, ZM, ZW				
	RW:				
	GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,				
	KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,				
	FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,				
	BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG				
	BR 2003012863	A	20050614	BR 2003-12863	20030716
	EP 1539857	A1	20050615	EP 2003-766194	20030716
	R:				
	AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,				
	IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK				
PRAI	US 2002-398196P	P	20020724		
	WO 2003-EP7734	W	20030716		

CLASS

PATENT NO. CLASS PATENT FAMILY CLASSIFICATION CODES

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US 2004019157 ICM C08G065-00  
INCL 525403000; 528405000

US 2004019157 NCL 525/403.000  
ECLA C08G065/324; C08G065/329; C08G065/331

WO 2004013205 ECLA C08G065/324; C08G065/329; C08G065/331

BR 2003012863 ECLA C08G065/324; C08G065/329; C08G065/331

EP 1539857 ECLA C08G065/324; C08G065/329; C08G065/331

AB Polyethylene glycol aldehyde compds. of R(CH<sub>2</sub>CH<sub>2</sub>O)<sub>n</sub>CH<sub>2</sub>CH<sub>2</sub>XYNH(CH<sub>2</sub>)<sub>p</sub>CHO  
(wherein R = capping groups; X = O, NH; Y = alkylencarbonyl, carbonyl,  
hydroxyalkylene, amido group; n = 10-10,000; and p = 1-3) or the like are  
provided. Methods of making and using such compds., as well as chemical  
intermediates are also provided, which may be used in connection with the  
pegylation of polypeptides and other biomols. (no data).

ST polyethylene glycol aldehyde deriv manuf carboamide linking

IT Polyoxyalkylenes, reactions  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture of aldehyde derivs. of polyethylene glycol)

IT 650634-80-3P **650634-82-5P** 650634-83-6P 650634-84-7P  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of aldehyde derivs. of polyethylene glycol)

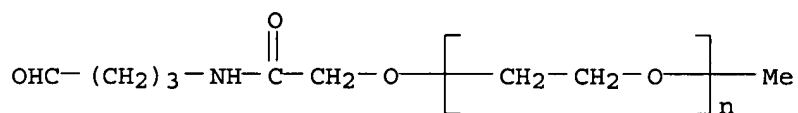
IT 39927-08-7P 67665-18-3P 127177-02-0P 188255-95-0P 650634-79-0P  
650634-81-4P  
RL: IMF (Industrial manufacture); RCT (Reactant); PREP (Preparation); RACT  
(Reactant or reagent)  
(manufacture of aldehyde derivs. of polyethylene glycol)

IT 5292-43-3, tert-Butyl bromoacetate 6346-09-4, 4-Aminobutyraldehyde  
diethyl acetal 9004-74-4, Methoxypolyethylene glycol 25322-68-3,  
Polyethylene glycol  
RL: RCT (Reactant); RACT (Reactant or reagent)  
(manufacture of aldehyde derivs. of polyethylene glycol)

IT **650634-82-5P**  
RL: IMF (Industrial manufacture); PREP (Preparation)  
(manufacture of aldehyde derivs. of polyethylene glycol)

RN 650634-82-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl), α-methyl-ω-[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



L18 ANSWER 4 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 2003:499291 HCAPLUS

DN 140:169365

ED Entered STN: 01 Jul 2003

TI Interactions between pH-sensitive liposomes and model membranes

AU Bergstrand, Nill; Arfvidsson, Maria C.; Kim, Jong-Mok; Thompson, David H.;  
Edwards, Katarina

CS Department of Physical Chemistry, Uppsala University, Uppsala, S-751 23,  
Swed.

SO Biophysical Chemistry (2003), 104(1), 361-379  
CODEN: BICIAZ; ISSN: 0301-4622

PB Elsevier Science B.V.

DT Journal

LA English

CC 63-5 (Pharmaceuticals)

AB The structure and dynamics of two different pH-sensitive liposome systems were investigated by means of cryotransmission electron microscopy and different photophys. techniques. Both systems consisted of dioleoylphosphatidylethanolamine (DOPE) and contained either oleic acid (OA) or a novel acid-labile polyethylene glycol-conjugated lipid (DHCho-MPEG5000) as stabilizer. Proton induced leakage, lipid mixing and structural changes were studied in the absence and presence of EPC liposomes, as well as in the presence of liposomes designed to model the endosome membrane. Neither DHCho-MPEG5000- nor OA-stabilized liposomes showed any tendency for fusion with pure EPC liposomes or endosome-like liposomes composed of EPC/DOPE/SM/Cho (40/20/6/34 mol.). Our investigations showed, however, that incorporation of lipids from the pH-sensitive liposomes into the endosome membrane may lead to increased permeability and formation of non-lamellar structures. Taken together the results suggest that the observed ability of DOPE-containing liposomes to

mediate

cytoplasmic delivery of hydrophilic mols. cannot be explained by a mechanism based on a direct, and non-leaky, fusion between the liposome and endosome membranes. A mechanism involving destabilization of the endosome membrane due to incorporation of DOPE, seems more plausible.

ST liposome pH sensitive interaction membrane

IT Membrane, biological

(interactions between pH-sensitive liposomes and model membranes)

IT Phosphatidylcholines, biological studies

RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(interactions between pH-sensitive liposomes and model membranes)

IT Sphingomyelins

RL: MOA (Modifier or additive use); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(interactions between pH-sensitive liposomes and model membranes)

IT Drug delivery systems

(liposomes; interactions between pH-sensitive liposomes and model membranes)

IT 2462-63-7, Dope 145035-96-7, DSPE-PEG 321674-35-5

RL: BSU (Biological study, unclassified); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(interactions between pH-sensitive liposomes and model membranes)

IT 80-97-7, Dihydrocholesterol 654655-87-5

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

(interactions between pH-sensitive liposomes and model membranes)

IT 112-80-1, Oleic acid, biological studies

RL: MOA (Modifier or additive use); PRP (Properties); THU (Therapeutic use); BIOL (Biological study); USES (Uses)

(interactions between pH-sensitive liposomes and model membranes)

RE.CNT 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD

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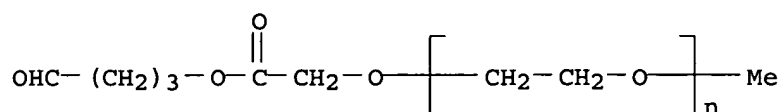
IT 654655-87-5

RL: FMU (Formation, unclassified); RCT (Reactant); FORM (Formation, nonpreparative); RACT (Reactant or reagent)

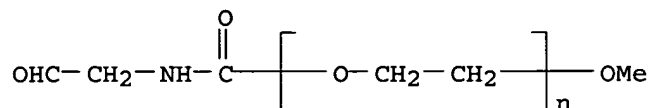
(interactions between pH-sensitive liposomes and model membranes)

RN 654655-87-5 HCAPLUS

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-(4-oxobutoxy)ethoxy]- (9CI) (CA INDEX NAME)



L18 ANSWER 5 OF 5 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 1989:497914 HCAPLUS  
 DN 111:97914  
 ED Entered STN: 16 Sep 1989  
 TI Functionalization of  $\alpha$ -hydrogen- $\omega$ -methoxypoly(oxyethylene).  
 1. A new method for the conversion of hydroxyl end groups into aldehyde groups  
 AU Vandoorne, Filip; Loccufier, Johan; Schacht, Etienne  
 CS Lab. Org. Chem., State Univ. Ghent, Ghent, B-9000, Belg.  
 SO Makromolekulare Chemie, Rapid Communications (1989), 10(6), 271-5  
 CODEN: MCRCD4; ISSN: 0173-2803  
 DT Journal  
 LA English  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 AB  $\alpha$ -[(4-Formylmethyl)aminocarbonyl]- $\omega$ -methoxypoly(oxyethylene)  
 was prepared from polyethylene glycol monomethyl ether by treatment with  
 4-nitrophenyl chloroformate in presence of 4-dimethylaminopyridine,  
 treatment of product with 3-amino-1,2-propanediol, and oxidation of the  
 dihydroxy intermediate. The diol groups were converted almost quant. into  
 the corresponding aldehyde by oxidation with NaIO<sub>4</sub>.  
 ST aldehyde prepn polyoxyethylene monomethyl ether; hydroxy group conversion  
 aldehyde  
 IT 1122-58-3, 4-Dimethylaminopyridine  
 RL: CAT (Catalyst use); USES (Uses)  
 (catalysts, in carbonate formation from polyethylene glycol monomethyl  
 ether and nitrophenyl chloroformate)  
 IT 122235-24-9P  
 RL: RCT (Reactant); SPN (Synthetic preparation); PREP (Preparation); RACT  
 (Reactant or reagent)  
 (preparation and oxidation of)  
 IT 122235-25-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, from polyethylene glycol monomethyl ether)  
 IT 9004-74-4  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with nitrophenyl chloroformate, in presence of  
 dimethylaminopyridine catalysts)  
 IT 616-30-8, 3-Amino-1,2-propanediol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with polyethylene glycol Me ether nitrophenyl carbonate)  
 IT 7693-46-1, 4-Nitrophenyl chloroformate  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (reaction of, with polyethylene glycol monomethyl ether, in presence of  
 dimethylaminopyridine catalysts)  
 IT 122235-25-0P  
 RL: SPN (Synthetic preparation); PREP (Preparation)  
 (preparation of, from polyethylene glycol monomethyl ether)  
 RN 122235-25-0 HCAPLUS  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -[[[(2-oxoethyl)amino]carbonyl]- $\omega$ -  
 methoxy- (9CI) (CA INDEX NAME)



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FILE 'USPATFULL' ENTERED AT 07:46:59 ON 05 OCT 2005

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FILE COVERS 1971 TO PATENT PUBLICATION DATE: 4 Oct 2005 (20051004/PD)

FILE LAST UPDATED: 4 Oct 2005 (20051004/ED)

HIGHEST GRANTED PATENT NUMBER: US6952836

HIGHEST APPLICATION PUBLICATION NUMBER: US2005217002

CA INDEXING IS CURRENT THROUGH 4 Oct 2005 (20051004/UPCA)

ISSUE CLASS FIELDS (/INCL) CURRENT THROUGH: 4 Oct 2005 (20051004/PD)

REVISED CLASS FIELDS (/NCL) LAST RELOADED: Aug 2005

USPTO MANUAL OF CLASSIFICATIONS THESAURUS ISSUE DATE: Aug 2005

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>>> USPAT2 is now available.  USPATFULL contains full text of the  <<<
>>> original, i.e., the earliest published granted patents or  <<<
>>> applications.  USPAT2 contains full text of the latest US  <<<
>>> publications, starting in 2001, for the inventions covered in  <<<
>>> USPATFULL.  A USPATFULL record contains not only the original  <<<
>>> published document but also a list of any subsequent  <<<
>>> publications.  The publication number, patent kind code, and  <<<
>>> publication date for all the US publications for an invention  <<<
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>>> /PK, etc.  <<<
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>>> classifications, or claims, that may potentially change from  <<<
>>> the earliest to the latest publication.  <<<
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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d bib abs hitstr tot l19

L19 ANSWER 1 OF 3 USPATFULL on STN

AN 2004:221771 USPATFULL

TI Pegylated T1249 polypeptide

IN Bailon, Pascal Sebastian, Florham Park, NJ, UNITED STATES

Won, Chee-Youb, Livingston, NJ, UNITED STATES

PI US 2004171542 A1 20040902

AI US 2003-625103 A1 20030722 (10)

PRAI US 2003-439213P 20030110 (60)

US 2002-398190P 20020724 (60)

DT Utility

FS APPLICATION

LREP HOFFMANN-LA ROCHE INC., PATENT LAW DEPARTMENT, 340 KINGSLAND STREET,

NUTLEY, NJ, 07110

CLMN Number of Claims: 149

ECL Exemplary Claim: 1

DRWN 7 Drawing Page(s)

LN.CNT 1472

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

AB Pegylated T1249 polypeptide compounds are provided. Also provided are pharmaceutical compositions containing pegylated T1249 polypeptide compounds, and methods of making. Further provided are methods of inhibiting HIV infection using such compounds and compositions.

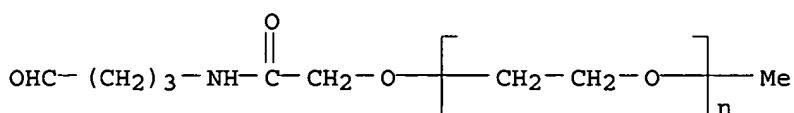
CAS INDEXING IS AVAILABLE FOR THIS PATENT.

IT 650634-82-5DP, reaction with T1249 650634-82-5P

(preparation of PEGylated T1249 polypeptide conjugates as antiviral agents)

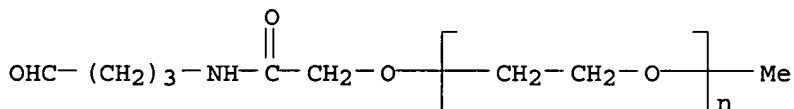
RN 650634-82-5 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



RN 650634-82-5 USPATFULL

CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



L19 ANSWER 2 OF 3 USPATFULL on STN

AN 2004:64499 USPATFULL

TI Pegylated T20 polypeptide

IN Bailon, Pascal Sebastian, Florham Park, NJ, UNITED STATES

Won, Chee-Youb, Livingston, NJ, UNITED STATES

PI US 2004049018 A1 20040311

AI US 2003-623873 A1 20030721 (10)

PRAI US 2002-398195P 20020724 (60)

DT Utility

FS APPLICATION

LREP HOFFMANN-LA ROCHE INC., PATENT LAW DEPARTMENT, 340 KINGSLAND STREET, NUTLEY, NJ, 07110

CLMN Number of Claims: 95

ECL Exemplary Claim: 1

DRWN No Drawings

LN.CNT 947

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

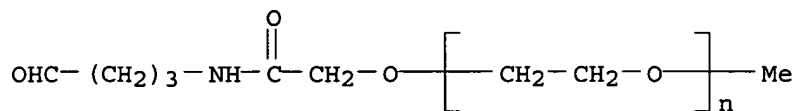
AB Pegylated T20 polypeptide compounds are provided. Also provided are pharmaceutical compositions containing pegylated T20 polypeptide compounds, and methods of making and using such compounds and compositions.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.

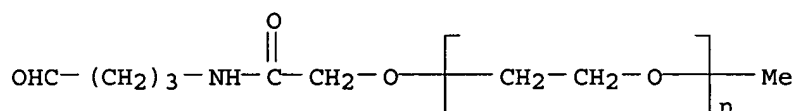
IT 650634-82-5DP, reaction with T20 peptide 650634-82-5P

(preparation of PEGylated T20 polypeptide conjugates as antiviral agents)

RN 650634-82-5 USPATFULL  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



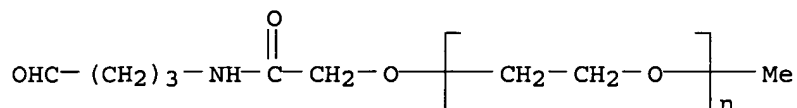
RN 650634-82-5 USPATFULL  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



L19 ANSWER 3 OF 3 USPATFULL on STN  
 AN 2004:25315 USPATFULL  
 TI Polyethylene glycol aldehydes  
 IN Won, Chee-Youb, Livingston, NJ, UNITED STATES  
 PI US 2004019157 A1 20040129  
 AI US 2003-623978 A1 20030721 (10)  
 PRAI US 2002-398196P 20020724 (60)  
 DT Utility  
 FS APPLICATION  
 LREP HOFFMANN-LA ROCHE INC., PATENT LAW DEPARTMENT, 340 KINGSLAND STREET,  
 NUTLEY, NJ, 07110  
 CLMN Number of Claims: 86  
 ECL Exemplary Claim: 1  
 DRWN No Drawings  
 LN.CNT 974  
 CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 AB Polyethylene glycol aldehyde compounds are provided. Methods of making and using such compounds, as well as chemical intermediates are also provided.

CAS INDEXING IS AVAILABLE FOR THIS PATENT.  
 IT 650634-82-5P  
 (manufacture of aldehyde derivs. of polyethylene glycol)

RN 650634-82-5 USPATFULL  
 CN Poly(oxy-1,2-ethanediyl),  $\alpha$ -methyl- $\omega$ -[2-oxo-2-[(4-oxobutyl)amino]ethoxy]- (9CI) (CA INDEX NAME)



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FILE COVERS 1907 - 5 Oct 2005 VOL 143 ISS 15  
 FILE LAST UPDATED: 4 Oct 2005 (20051004/ED)

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This file contains CAS Registry Numbers for easy and accurate substance identification.

=> d l25 all hitstr tot

L25 ANSWER 1 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:384411 HCAPLUS  
 DN 133:38711  
 ED Entered STN: 09 Jun 2000  
 TI Preparation of stable and bioactive polymer derivatized  
**erythropoietins**  
 IN Beals, John Michael; Glaesner, Wolfgang; Micanovic, Radmilla; Millican,  
 Rohn Lee, Jr.; Witcher, Derrick Ryan  
 PA Eli Lilly and Company, USA  
 SO PCT Int. Appl., 94 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C12N015-12  
 ICS C12N001-21; C07K014-505; A61K047-48; A61K038-18; A01K067-027;  
 A61P007-06  
 CC 2-10 (Mammalian Hormones)  
 Section cross-reference(s): 3, 63  
 FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000032772	A2	20000608	WO 1999-US27801	19991123 <--
	WO 2000032772	A3	20010531		
	W:	AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM			
	RW:	GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG			
	CA 2352538	AA	20000608	CA 1999-2352538	19991123 <--
	EP 1135493	A2	20010926	EP 1999-967124	19991123 <--

R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,  
IE, SI, LT, LV, FI, RO

JP 2002531089 T2 20020924 JP 2000-585403 19991123 <--  
PRAI US 1998-110289P P 19981130 <--  
WO 1999-US27801 W 19991123 <--

## CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000032772	ICM	C12N015-12
	ICS	C12N001-21; C07K014-505; A61K047-48; A61K038-18; A01K067-027; A61P007-06
WO 2000032772	ECLA	A61K038/18B; A61K047/48H4P; C07K014/505 <--
AB		The present invention addresses the need for better pharmaceutical agents for treating anemias by providing polymer derivatized non-glycosylated erythropoietic compds. which show stability and bioactivity in vivo. The invention further provides methods for preparing these derivatized proteins which involves the use of a linkerless aldehyde modification process. Polynucleotides encoding proteins of the invention and formulations containing the proteins are also claimed.
ST		polymer derivatized erythropoietin analog prepn stability bioactivity
IT		<b>Polyoxyalkylenes, biological studies</b> RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (aldehyde group terminated, reaction products with erythropoietin analogs; preparation of stable and bioactive polymer derivatized erythropoietins)
IT		Polynucleotides RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process) (encoding proteins of the invention; preparation of stable and bioactive polymer derivatized erythropoietins)
IT		Drug delivery systems Erythropoiesis (preparation of stable and bioactive polymer derivatized erythropoietins)
IT		274750-02-6P 274750-04-8DP, polymer derivs. RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); SPN (Synthetic preparation); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses) (amino acid sequence; preparation of stable and bioactive polymer derivatized erythropoietins)
IT		273950-24-6 RL: BPR (Biological process); BSU (Biological study, unclassified); BIOL (Biological study); PROC (Process) (encoding proteins of the invention; preparation of stable and bioactive polymer derivatized erythropoietins)
IT		11096-26-7DP, Erythropoietin, polymer derivs. 25322-68-3DP, Polyethylene glycol, aldehyde group terminated, reaction products with erythropoietin analogs 96024-34-9DP, Erythropoietin (human), polymer derivs. 96024-34-9P, Erythropoietin (human) 134547-95-8P, 1-165-Erythropoietin (human clone $\lambda$ HEPOFL13 protein moiety reduced) 273950-04-2P 273950-05-3P 273950-06-4P 273950-07-5P 273950-08-6P 273950-09-7P 273950-10-0P 273950-11-1P 273950-12-2P 273950-13-3P 273950-14-4P 273950-15-5P 273950-16-6P 273950-17-7P 273950-18-8P 273950-19-9P 273950-20-2P 273950-21-3P 273950-22-4DP, polymer derivs. 273950-23-5DP, polymer derivs. RL: BAC (Biological activity or effector, except adverse); BPN (Biosynthetic preparation); BSU (Biological study, unclassified); SPN

(Synthetic preparation); THU (Therapeutic use); BIOL (Biological study);  
 PREP (Preparation); USES (Uses)  
 (preparation of stable and bioactive polymer derivatized erythropoietins)  
 IT 96024-33-8, Erythropoietin (human clone  $\lambda$ HEPOFL13 precursor protein  
 moiety reduced)  
 RL: PRP (Properties)  
 (unclaimed protein sequence; preparation of stable and bioactive polymer  
 derivatized erythropoietins)

L25 ANSWER 2 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN  
 AN 2000:290970 HCAPLUS  
 DN 132:308873  
 ED Entered STN: 05 May 2000  
 TI Method for preparation of polyethylene glycol aldehyde derivatives  
 IN Baudys, Miroslav; Liu, Feng; Kim, Sung Wan  
 PA University of Utah Research Foundation, USA  
 SO PCT Int. Appl., 31 pp.  
 CODEN: PIXXD2  
 DT Patent  
 LA English  
 IC ICM C07C043-10  
 ICS C07C047-12; C07C321-14  
 CC 35-8 (Chemistry of Synthetic High Polymers)  
 Section cross-reference(s): 34

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	WO 2000024697	A1	20000504	WO 1999-US25174	19991026 <--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CR, CU, CZ, DE, DK, DM, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, TZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG				
	US 6465694	B1	20021015	US 2001-830470	20010604 <--
PRAI	US 1998-105630P	P	19981026 <--		
	WO 1999-US25174	W	19991026 <--		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
WO 2000024697	ICM	C07C043-10
	ICS	C07C047-12; C07C321-14
WO 2000024697	ECLA	C07C319/12 <--
US 6465694	NCL	568/494.000; 568/041.000
	ECLA	C07C319/12 <--

AB The polyethylene glycol (PEG) aldehyde derivs. are prepared efficiently under mild conditions by dissolving PEG in an apolar solvent containing 2 equiv K<sub>2</sub>CO<sub>3</sub> for each OH group to form a mixture, adding an effective amount of a catalyst and O<sub>2</sub> to the mixture, heating at 40-90° for a sufficient period of time for PEG to be oxidized to the PEG aldehyde. These aldehyde derivs. can be used to make PEG-hydrazines, PEG-thiols, PEG amines, and branched PEG. PEG aldehyde derivs. or other functional PEG derivs. prepared from PEG aldehydes are useful for protein conjugation and surface modification (no data).

ST polyethylene glycol oxidn aldehyde; polyoxyalkylene glycol oxidn; branched polyethylene glycol; hydrazine deriv polyethylene glycol; thiol deriv polyethylene glycol

- IT **Polyoxyalkylenes, preparation**  
**Polyoxyalkylenes, preparation**  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (aldehyde group-terminated; preparation of polyethylene glycol  
 aldehyde derivs. by oxidation under mild conditions)
- IT **Polyoxyalkylenes, reactions**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (glycols; preparation of polyethylene glycol aldehyde derivs. by  
 oxidation under mild conditions)
- IT **Oxidation**  
 (preparation of polyethylene glycol aldehyde derivs. by oxidation under mild  
 conditions)
- IT **Polyoxyalkylenes, reactions**  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of polyethylene glycol aldehyde derivs. by oxidation  
 under mild conditions)
- IT **Proteins, general, miscellaneous**  
 RL: MSC (Miscellaneous)  
 (preparation of polyethylene glycol aldehyde derivs. for protein conjugation  
 and surface modification)
- IT 25322-68-3DP, Polyethylene glycol, aldehyde group-terminated  
 RL: IMF (Industrial manufacture); PREP (Preparation)  
 (preparation of polyethylene glycol aldehyde derivs. by oxidation under mild  
 conditions)
- IT 25322-68-3, Polyethylene glycol  
 RL: RCT (Reactant); RACT (Reactant or reagent)  
 (preparation of polyethylene glycol aldehyde derivs. by oxidation under mild  
 conditions)

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD

RE

- (1) GenentechInc; EP 0372752 A2 1990 HCAPLUS
- (2) Harris; US 5252714 A 1993 HCAPLUS
- (3) Harris; J Org Chem 1982, V47, P4789 HCAPLUS
- (4) Marko; Science 1996, V274(5295), P2044 HCAPLUS
- (5) Rhee; US 5510418 A 1996 HCAPLUS

L25 ANSWER 3 OF 3 HCAPLUS COPYRIGHT 2005 ACS on STN

AN 1999:753760 HCAPLUS

DN 131:356145

ED Entered STN: 28 Nov 1999

TI Heterotelechelic polymers having biotin residue and enzymes  
 modified with the polymers

IN Kataoka, Kazunori; Nagasaki, Sachio; Yamamoto, Chikai; Kwong, Glen S.

PA Japan

SO Jpn. Kokai Tokkyo Koho, 8 pp.

CODEN: JKXXAF

DT Patent

LA Japanese

IC ICM C08G065-26

ICS C12N011-08

CC 63-6 (Pharmaceuticals)

Section cross-reference(s): 38

FAN.CNT 1

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 11322916	A2	19991126	JP 1998-142044	19980511 <--
PRAI JP 1998-142044		19980511	<--	

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 11322916 ICM C08G065-26  
ICS C12N011-08

AB HCOA(CH<sub>2</sub>CH<sub>2</sub>O)nCH<sub>2</sub>CH<sub>2</sub>B (A = alkyleneoxy; B = biotin moiety which may have linking group; n = 2-20,000), useful as diagnostic agents for biochem. substances, etc., are claimed. Also claimed are Enz-Y[CH<sub>2</sub>A(CH<sub>2</sub>CH<sub>2</sub>O)nCH<sub>2</sub>CH<sub>2</sub>B]q (Enz = enzyme residue; Y = covalent bond formed via ε-amino group of lysine residue in the enzyme; q ≥ 1; A, B, n = same as above) useful as substitutes for enzyme-antibody conjugates in antibody-directed enzyme prodrug therapy (ADEPT). The modified enzymes left in blood after dosing can be excreted from the body by administration of avidin. A THF solution of 3,3-diethoxy-1-propanol was metalated with K naphthalene and then treated with ethylene oxide at 0° for 2 h. Anionic ring-opening polymerization was stopped by addition of a DMSO solution of N-succinimidyl-D-biotin to give polyethylene oxide having acetal group and biotin residue at each end. The heterotelechelic polymer was deacetalized and reacted with bovine carboxypeptidase A to give modified enzyme.

ST heterotelechelic polymer aldehyde biotin terminated enzyme modification; enzyme prodrug therapy aldehyde biotin terminated polyoxyalkylene

IT **Polyoxyalkylenes, biological studies**  
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

IT **Polyoxyalkylenes, biological studies**  
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(aldehyde- and biotin-terminated; aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

IT Enzymes, biological studies  
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(conjugates; aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

IT Drug delivery systems  
(prodrugs; aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

IT Polymers, biological studies  
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(telechelic; aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

IT 11075-17-5DP, Carboxypeptidase A, reaction products with aldehyde- and biotin residue-terminated polyoxyethylene 25322-68-3DP, aldehyde- and biotin-terminated  
RL: PNU (Preparation, unclassified); THU (Therapeutic use); BIOL (Biological study); PREP (Preparation); USES (Uses)  
(aldehyde group- and biotin residue-terminated heterotelechelic polymers for modification of enzymes used in enzyme prodrug therapy.)

=> d his

(FILE 'HCAPLUS' ENTERED AT 07:48:58 ON 05 OCT 2005)  
DEL HIS

jan delaval - 5 october 2005

L1           E POLYOXYALKYLENES/CT  
105 S E3 (L) ALDEHYD?  
          E POLYOXYALKYLENES, /CT  
L2           0 S E7-E10 (L) ALDEHYD?  
L3           40 S E13-E15,E17 (L) ALDEHYD?  
L4           34 S E20,E21 (L) ALDEHYD?  
          E POLYOXYALKYLENES/CW  
L5           105 S E3 (L) ALDEHYD?  
L6           105 S L1-L5  
          ACT WITH715B/A  
          -----  
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L8 (           4)SEA FILE=HCAPLUS ABB=ON PLU=ON (US2002-407741# OR US2002-3815  
L9 (           4)SEA FILE=HCAPLUS ABB=ON PLU=ON (L7 OR L8)  
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L11 (          48)SEA FILE=HCAPLUS ABB=ON PLU=ON ("NHO K"/AU OR "NHO K H"/AU OR  
L12 (          3)SEA FILE=HCAPLUS ABB=ON PLU=ON ("SUN BIO CO"/PA OR "SUN BIO C  
L13 (          4)SEA FILE=HCAPLUS ABB=ON PLU=ON L9 AND (L10 OR L11 OR L12)  
L14          168 SEA FILE=HCAPLUS ABB=ON PLU=ON (L10 OR L11 OR L12) NOT L13  
          -----  
L15          0 S L6 AND L14  
L16          69 S L6 AND (PY<=2001 OR PRY<=2001 OR AY<=2001)  
L17          36 S L6 NOT L16  
L18          65 S L16 NOT (ROSEN P? OR KWANG N?)/AU  
          SEL DN AN 2 4 6 8 12-19 24 25 28 31 33-40 43 45-65  
L19          19 S L18 NOT E1-E138  
          SEL RN  
  
FILE 'REGISTRY' ENTERED AT 08:02:34 ON 05 OCT 2005  
L20          179 S E139-E317  
L21          23 S L20 AND C2H4O  
L22          1 S 25322-68-3  
L23          23 S L20 AND PMS/CI NOT L21  
  
FILE 'HCAPLUS' ENTERED AT 08:04:58 ON 05 OCT 2005  
L24          7 S L19 AND (NEURONS OR BIOTIN OR DERIVATIVES OR HYDRATES OR ERYT  
          SEL DN AN 1 2 6 7  
L25          3 S L24 NOT E318-E329  
L26          129 S L22 (L) ALDEHYD?  
L27          3 S L25 AND L26  
L28          100 S L26 AND (PY<=2001 OR PRY<=2001 OR AY<=2001)  
L29          64 S L28 NOT L16

FILE 'HCAPLUS' ENTERED AT 08:16:52 ON 05 OCT 2005

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